

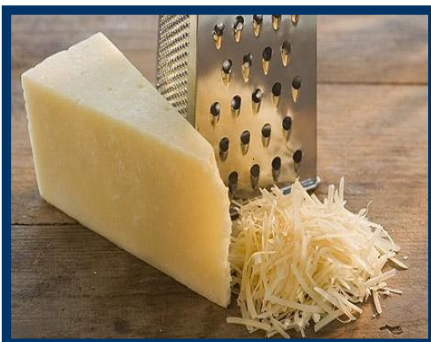
**Kerry Ingredients and  
Flavours EMEA Newmarket  
Scarteen Lower,  
Newmarket Co. Cork.**



# **Kerry Ingredients & Flavours EMEA Newmarket**

**2011 Annual  
Environmental Report for  
Newmarket Cooperative  
Creameries  
(Reg: P0793-01)**

**March 2012**



# Kerry Ingredients & Flavours

## Newmarket

Scarteen Lower, Newmarket, Co. Cork  
IPPC Licence Reg. No. P0793-01

### Annual Environmental Report 2011

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## 1.0 Introduction

Kerry Group acquired Newmarket Cooperative Creameries Ltd. in October 2010 and the facility now trades as 'Kerry Ingredients & Flavours EMEA-Newmarket' (KIF Newmarket) however, Newmarket Cooperative Creameries Ltd. remains the registered company name under the IPPC licence.

This document is the second Annual Environmental Report (AER) covering environmental performance at the KIF Newmarket facility located at Scarteen Lower, Newmarket, Co. Cork.

The report covers the 2011 reporting period. This AER has been prepared in accordance with the EPA 'Guidance note for: Annual Environmental Report' (October 2001) and other relevant guidance as provided by the EPA on the Agency website ([www.epa.ie](http://www.epa.ie)).

KIF Newmarket operates an Environmental Management System (EMS) accredited to the International Standard ISO14001, which sets out a framework for environmental management at the site. KIF Newmarket are an accredited ISO 14001 facility and are audited on an annual basis by an external body (National Standards Authority of Ireland).

The next AER will cover the calendar year 2012 and will be issued in the first quarter of 2013.

### 1.1 Licence Details

<b>IPPC Licence Register No.:</b>	P0793-01
<b>Licence Issue date:</b>	30 <sup>th</sup> September 2009
<b>Licensee:</b>	Newmarket Cooperative Creameries Ltd.
<b>Location of Activity:</b>	Scarteen Lower, Newmarket, Co Cork

### 1.2 Company Profile

KIF Newmarket specialise in the processing of milk to produce cheese, whey, whey concentrate, salt whey and cream by-products. The facility was established in 1944. The modern general purpose creamery constructed in 1961.

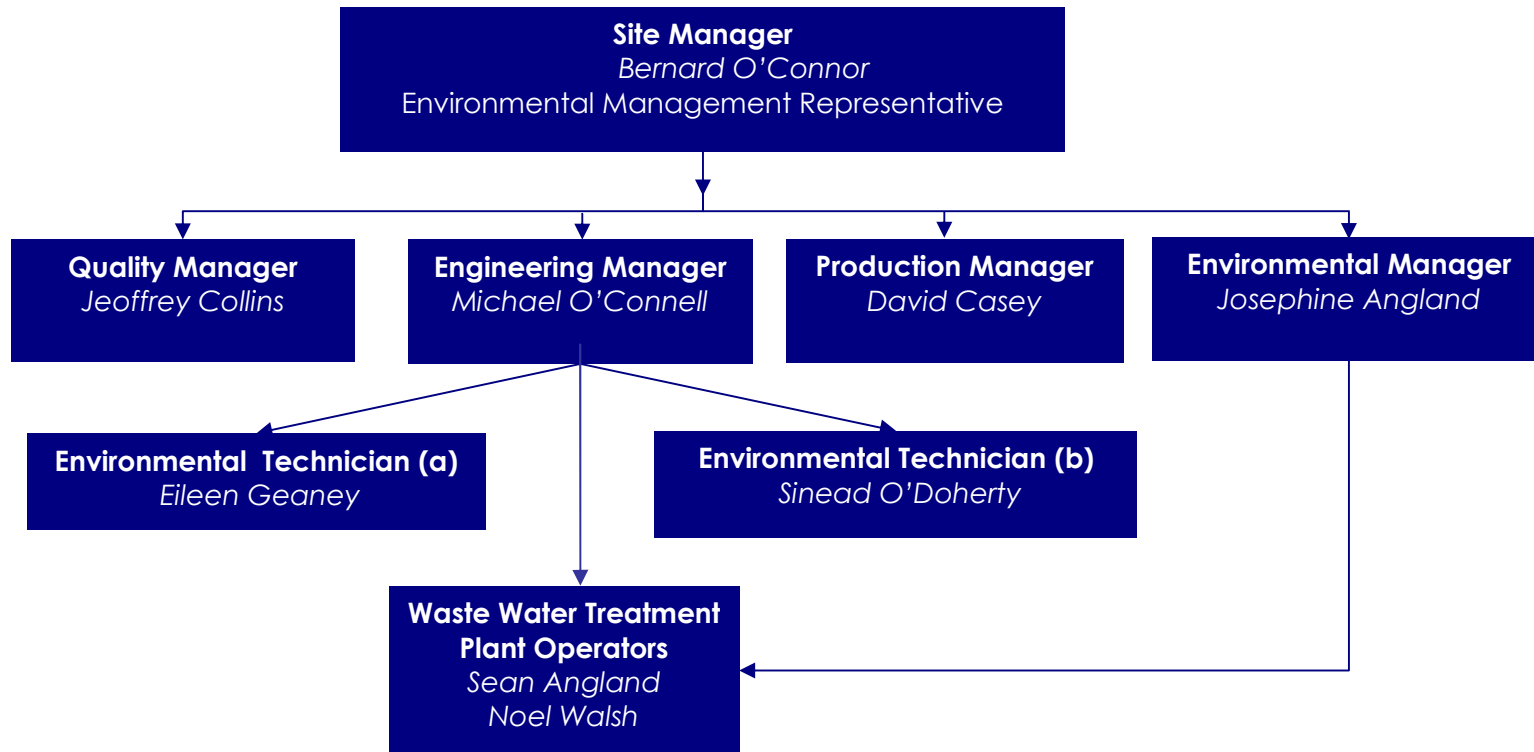
Between 2007 and 2009 modernisations at the plant allowed milk intake capacity to increase to 1300 m<sup>3</sup> per day. This has almost doubled the plant's original throughput capacity. Milk processing at the plant is of seasonal nature with cheese production commencing in mid February and continuing until October. At peak production, KIF Newmarket operates on a 24 hour a day basis 6 day a week basis.

An outline of the employee structure within the Environmental Department at KIF Newmarket is presented in Figure 1 below.

Figure 1: Organisational Structure



**KIF Newmarket  
Environmental Management Structure**



### 1.3 Description of Activity

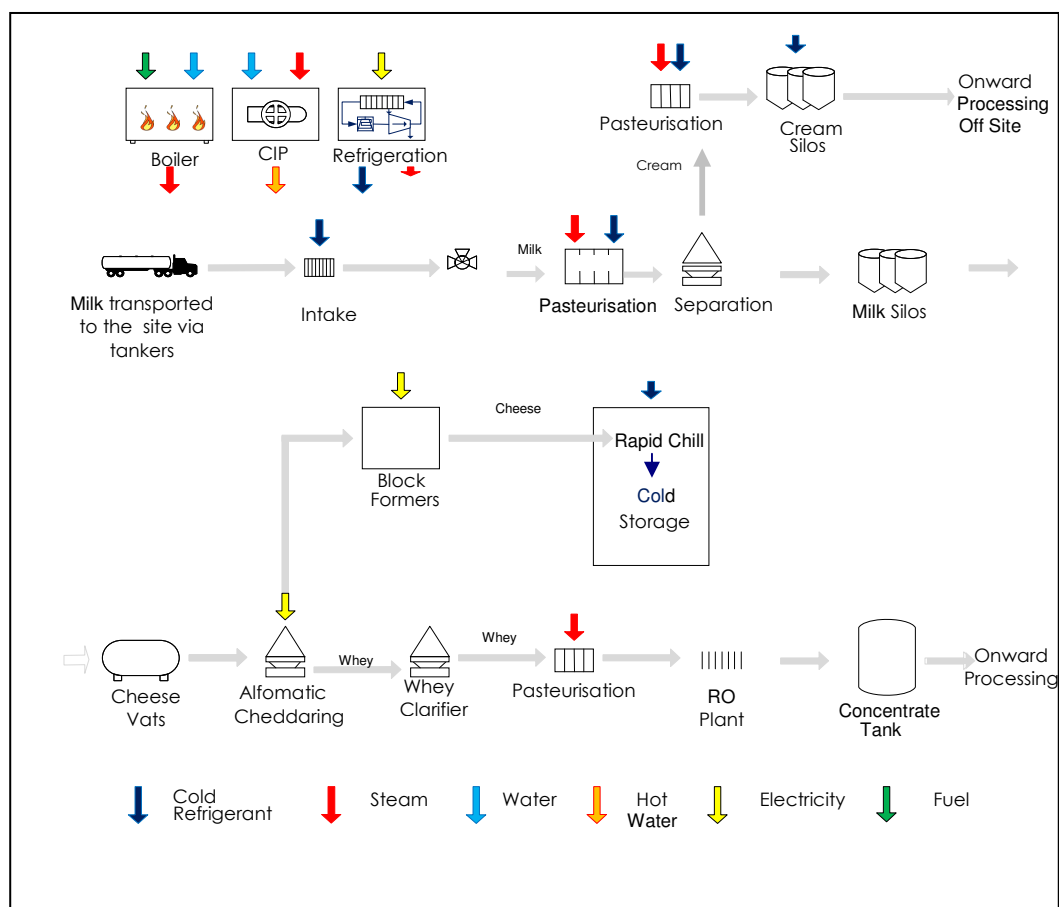
The primary raw material, milk, is collected from farms by local contractors with milk sourced from other processors when necessary. Once delivered to the site, the milk is sampled, cooled and pumped into storage silos at the plant. The milk is then filtered and pasteurised before being sent to cheese vats where ingredients and starting cultures are added to form curd and whey.

Once the curd and whey are separated, the curd is shredded and salted before being sent to block formers where 20 kilogram blocks of cheese are formed.

The whey portion is clarified to recover fines and fats and then processed through a reverse osmosis plant which concentrates the solids. The concentrated solids are then sold to other facilities within the industry for further processing.

A flow diagram of the process is presented on Figure 2.

**Figure 2: Process flow Diagram**



## 1.4 Environmental Policy



**Kerry Ingredients & Flavours EMEA - Newmarket**  
Newmarket  
Co. Cork

### **ENVIRONMENTAL POLICY**

Kerry Ingredients & Flavours EMEA - Newmarket is involved in the manufacture of cheese, whey concentrate and whey cream.

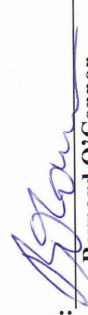
The company is committed to continual environmental improvement and environmental protection by preventing or reducing the environmental impacts that could result from the development, purchasing, manufacturing, packaging, distribution, use and disposal of its dairy products.

The company is committed to conserving natural resources and preventing pollution by reducing wastes at their sources, reusing and recycling material where possible and disposing of waste safely.

The company shall comply with all applicable legal requirements and with other requirements to which the company subscribes which relate to its environmental aspects and where possible exceed legislative requirements.

The company is committed to operating an Environmental Management System in accordance with ISO 14001: 2004. This provides us with the framework for implementing this policy and setting and reviewing Environmental Objectives and Targets.

The company's Environmental Policy shall be made publicly available, communicated to all employees and all persons working for or on behalf of the company, regularly reviewed to reflect legislative, customer and company changes.

Signed:   
Bernard O'Connor  
Site Manager

Date: 17/02/2012

**CONTROLLED**

## 2.0 Discharges, Wastes and Resources Summary Data

This section of the Annual Environmental Report (AER) summarises all environmental and resource monitoring information for the 2011 reporting period.

Information on discharges to water are summarised as annual mass emissions and are based on the measured concentration for the relevant parameter multiplied by the totalised volumetric flow for the year from the relevant emission point.

Information on waste arisings is presented in accordance with the AER electronic report spreadsheet as issued by the EPA.

This section includes an evaluation of all non-compliances with the conditions and schedules of the IPPC Licence as reported to the Agency during 2011.

### 2.1 Emissions to Air

Liquid milk is processed at KIF Newmarket to produce cheese through a series of manufacturing steps which involve the application of heat as steam. The steam demand is provided by two boilers at the site run on Medium Fuel Oil (MFO). KIF Newmarket has two licensed emission points A1-1 and A1-2 to atmosphere.

Other emissions at the site are minor and fugitive in nature and predominantly arise from air vents.

#### 2.1.1 Boilers Emissions

Emissions to air are discharged in accordance with Schedule B.1 Emissions to Air of the IPPC Licence which specifies the Emission Limit Values (ELV's) to which the discharge must conform. The ELV's are described in Table 1 below.

**Table 1: Permitted Emissions to Air**

Emission Point Ref No.	A1-1 (Boiler 1)	A1-2 (Boiler 2)
Location	Rear of Cheese Factory Building	Rear of Cheese Factory Building
Stack Height	25m	25m
Parameter	Emission Limit Value	
Volume	144,050m <sup>3</sup> /day	136,800m <sup>3</sup> /day
NO <sub>x</sub>	750 mg/m <sup>3</sup>	750 mg/m <sup>3</sup>
SO <sub>x</sub>	1190 mg/m <sup>3</sup>	1190 mg/m <sup>3</sup>
Particulates	50 mg/m <sup>3</sup>	50 mg/m <sup>3</sup>



Under Schedule C.1.2. 'Monitoring of Emissions to Air' of the IPPC Licence KIF Newmarket is required to undertake air monitoring annually.

The boiler configuration at KIF Newmarket is a duty/standby system, where one boiler supplies all of the steam demand for the facility and the second boiler remains on hot standby. In order to ensure that both units are capable of meeting the site steam demand at any given time, the 'duty' alternates between the boilers on a scheduled basis.

Air emissions monitoring was undertaken at the facility in July 2011 by Wright Environmental Services (WES). The monitoring was undertaken on both of the steam raising boilers A1-1 & A1-2.

In order to obtain a representative sample of air emissions from the facility, the duty requirement was alternated between both units.

A summary of the results obtained from the monitoring are set out in Table 2.

**Table 2: Air Emissions Monitoring Results**

Emission Point Ref No.	A1-1 (Boiler 1)		A1-2 (Boiler 2)	
	Run 1	Run 2	Run 1	Run 2
Volume (m <sup>3</sup> /hr)	2566	2534	3493	2915
NO <sub>x</sub> (mg/m <sup>3</sup> )	579	606	693	718
SO <sub>x</sub> (mg/m <sup>3</sup> )	1228	1270	1241	1242
PM (mg/m <sup>3</sup> )	484	370	680	355

Monitoring results returned for the site identified an exceedence of particulate matter and oxides of sulphur. KIF Newmarket reported these exceedences to the Agency on receipt of the air monitoring report.

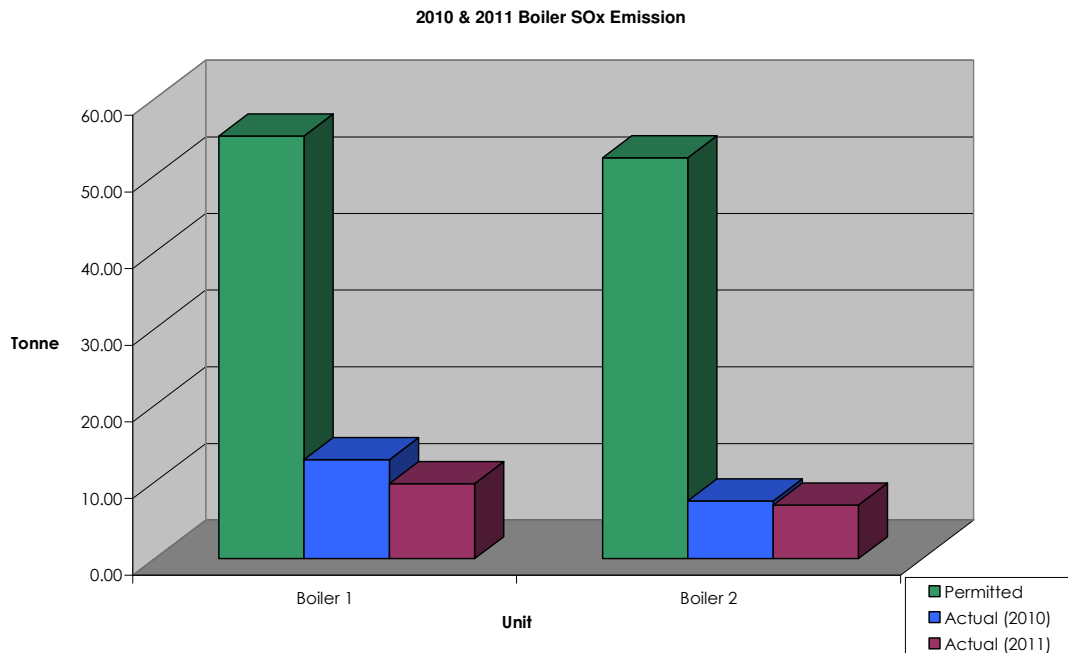
Although the concentration limit for oxides of sulphur was exceeded, the hourly mass emission rate (kg/hr) was not been exceeded and as a result the discharge was below the levels modelled in the licence application. The exceedence did not result in a breach of National Air Quality Standards.

The particulate emissions from the boilers exceeded the limit value during the monitoring tests. The particulate emission limit value of 50mg/Nm<sup>3</sup> is not appropriate for the fuel type being burned at the site. KIF Newmarket has engaged with the Agency to increase the emission limit value to a more appropriate value. The current particulate emissions have been demonstrated as not causing an impact on National Air Quality Standards.

**Table 3: Mass Emissions to Air (2010 & 2011)**

Emission Ref No.	Point	A1-1 (Boiler 1)		A1-2 (Boiler 2)	
		2010	2011	2010	2011
NO <sub>x</sub>	(T)	4.94	4.65	3.60	3.98
SO <sub>x</sub>	(T)	12.92	9.79	7.54	7.00
PM	(T)	4.51	3.35	2.01	2.92

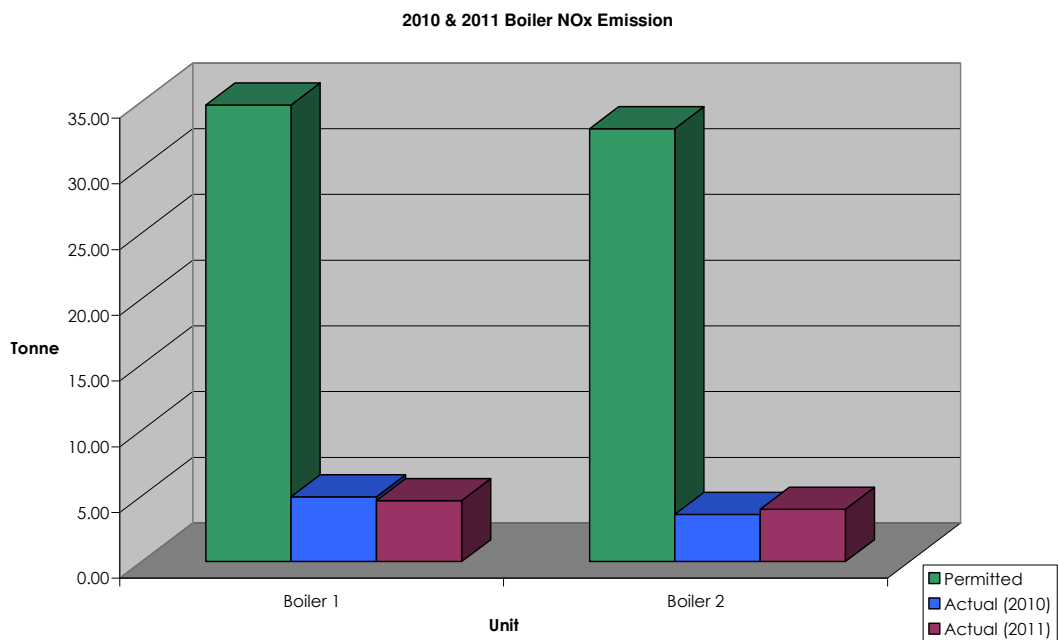
**Figure 3: 2010 & 2011 Boiler SO<sub>x</sub> Emission**



Notwithstanding the exceedence of the SO<sub>x</sub> emission limit value in 2011 at A1-1 and A1-2, it is clear that the annual mass emissions of SO<sub>x</sub> from the facility are significantly below the permitted mass emission.

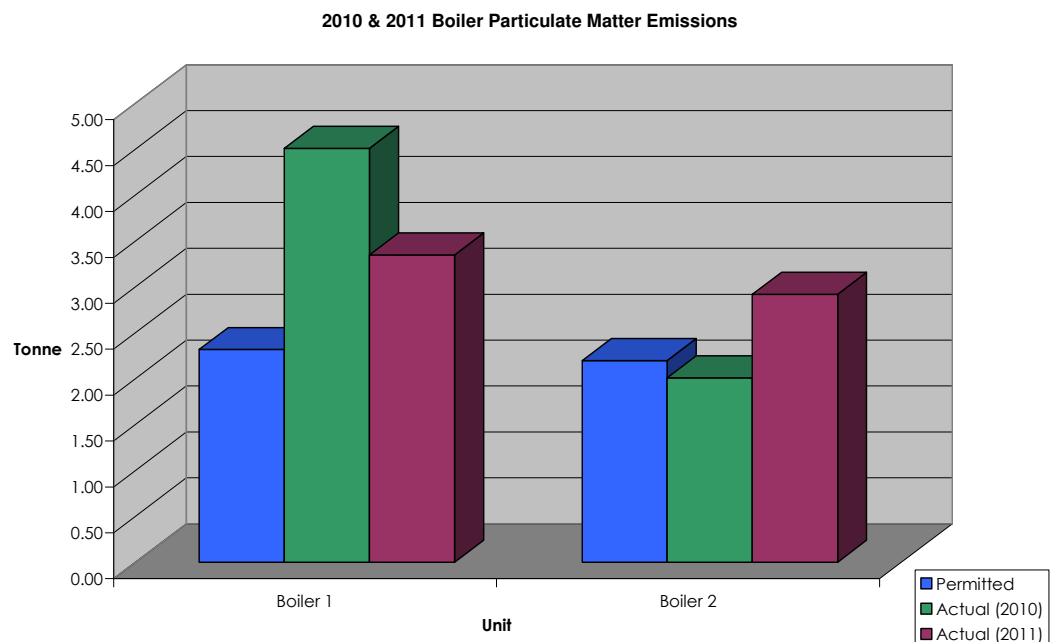
It is noted that there has been a reduction in SO<sub>x</sub> emissions from the site in 2011 when compared to 2010. Mass Emission of SO<sub>x</sub> from the boilers is directly related to the run hours of the boilers and the sulphur content of the fuel. Efficiencies achieved in terms of steam demand will reduce SO<sub>x</sub> emissions, however, KIF Newmarket have limited control over the SO<sub>x</sub> produced due to the content of sulphur in the fuel.

**Figure 4: 2010 & 2011 Boiler NOx Emission**



The actual mass emission of NO<sub>x</sub> emitted from A1-1 & A1-2 is below the permitted mass emission from the facility. Mass emissions of NO<sub>x</sub> emitted from A1-1 & A1-2 in 2010 and 2011 show no significant change from year to year, demonstrating the controlled nature of boilers at the site.

**Figure 5: 2010 & 2011 Boiler Particulate Matter Emissions**



The particulate matter mass emission for boiler 1 was in exceedence of the permitted level in 2011. The exceedence arises from the current inability of the facility to achieve an emission limit value of 50mg/Nm<sup>3</sup> whilst burning MFO.

KIF Newmarket has prepared a revised Air Dispersion model to the Agency with amended emission limit values and submitted this to the Agency for approval. It is noted that the current air emissions did not result in any breach of national air quality standards.

## 2.2 Discharges to Water

KIF Newmarket discharge treated effluent to the River Rampart via the Mill Stream at a single licensed emission point (Ref. SW-1). There are no other effluent discharges from the plant to surface water.

Liquid wastes from dairy processing activities are derived from wash waters derived from cleaning of process tanks and equipment. Truck washes and reject liquid wastes from the reverse osmosis plant are also conveyed to the WWTP for treatment prior to discharge.

To ensure that no contamination occurs of surface water, all external areas where milk is unloaded and stored are contained within the foul water catchment.

Other sources of waste waters requiring treatment include liquid waste from cooling water systems, boiler condensate and blowdown.

In addition to the above sources of wastewater, foul waste waters arise from canteen and toilet areas in the main production plant.

Schedule B.2 Emissions to Water of IPPC Licence P0793-01 detailing the volumes and quality of effluent which can be discharged from the site is presented below.

<b>Emission Point Reference:</b>	SW-1
<b>Name of Receiving Water:</b>	Rampart Stream (via Mill Stream)
<b>Location:</b>	Mill Stream
<b>Maximum Volume to be emitted:</b>	2000m <sup>3</sup> /day 100m <sup>3</sup> /hr

**Table 4: Permitted Emissions to Water**

Parameter	Emission Limit Value	
Temperature	25 °C (Max)	
pH	6-9	
Toxicity	5 TU	
	Mg/l	Kg/day
BOD	10	10
COD	50	50
Suspended Solids	15	15
Total Nitrogen (as N)	20	20
Nitrates (as N)	15	15
Ammonia (as N)	0.5	0.5
Molybdate Reactive Phosphate	0.5	0.5
Total Phosphorous (as P)	1	1
Oils, Fats and Greases	10	10

The wastewater treatment plant is an activated sludge system comprising fat removal (Dissolved Air Flotation-DAF), balancing, denitrification, and aeration stages. Treated effluent is clarified and filtered prior to pumping the treated discharge to the River Rampart.

Activated sludge waste from the wastewater treatment plant is dewatered before being transported off site for composting at a permitted facility.

A table with a summary of the annual mass emissions for the 2011 reporting period are presented in Table 5. The mass emission has been prepared on the basis of the measured volumetric discharge and available water quality measurements.

The calculated mass emission of each parameter is based on the actual discharge multiplied by the actual parameter determined concentration which has been established through water quality analysis.

The permitted licence emission is based on the maximum daily emission from the site in kg/day over a 1 year period.

The permitted flow versus the actual volume of water discharged over the 2010 & 2011 reporting period is presented graphically on Figure 6 below.

**Figure 6: 2010 & 2011 Volumetric Discharge at SW-1**

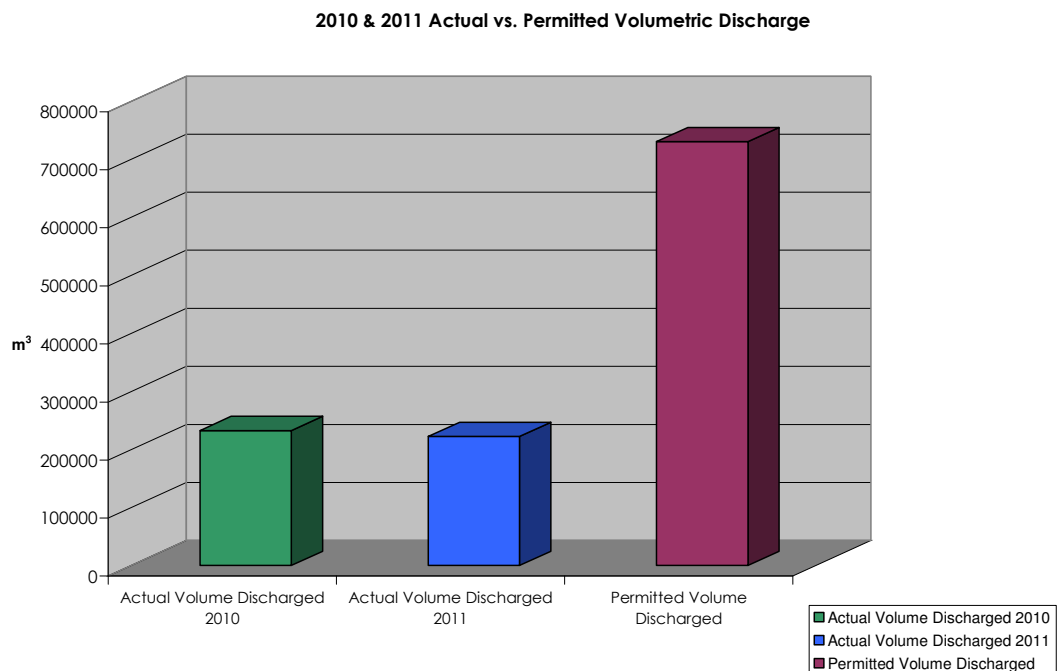


Table 5 below contains a summary of mass emissions for the 2010 & 2011 reporting period.

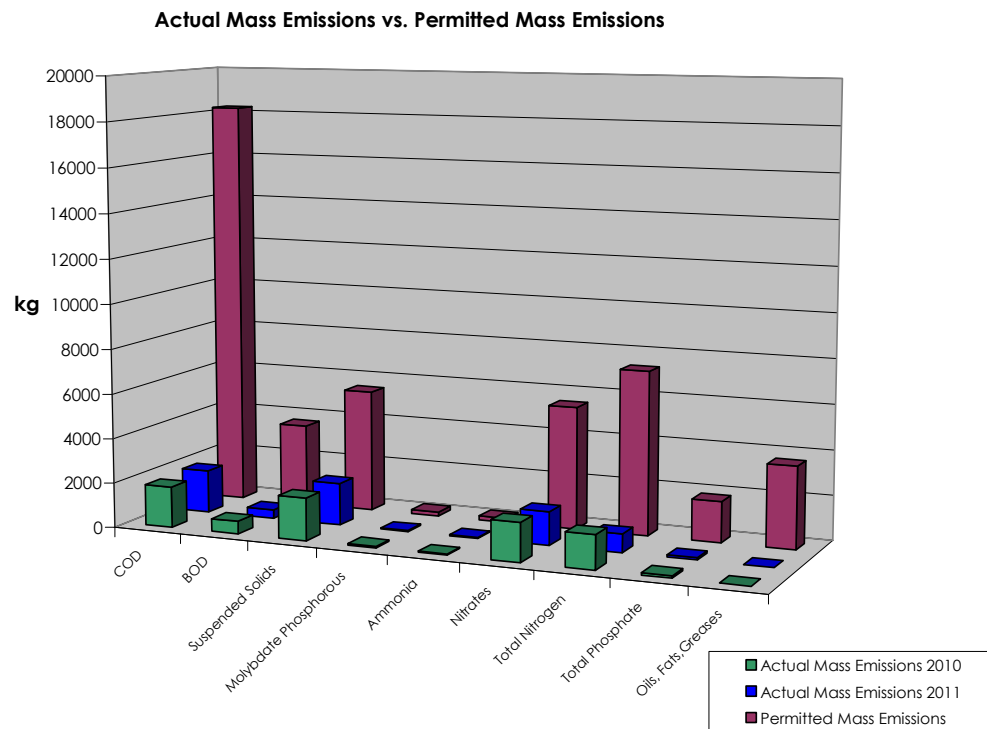
**Table 5: Summary Mass Emissions (SW-1)**

Parameter	Actual Mass Emission 2010 (kg)	Actual Mass Emission 2011 (kg)	Percentage Difference 2010 / 2011 (%)	Permitted Mass Emission (kg)
Flow (m <sup>3</sup> )	232,626(m <sup>3</sup> )	221,993(m <sup>3</sup> )	-4.57	730,000(m <sup>3</sup> )
COD	1,824.2	1,907.3	4.56	18,250
BOD	568.7	390.9	-31.26	3,650
Suspended Solids	1,899.1	1,877.9	-1.12	5,475
Total Phosphorous	66.5	48.2	-27.52	182.5
Ammonia	49.7	43.3	-12.88	182.5
Nitrates	1,722.2	1,487.5	-13.63	5,475
Total Nitrogen	1,513.3	816.1	-46.07	7,300
Molybdate Reactive Phosphorous	94.4	97.1	2.86	1,825
OFG	-Note 1	-Note 1	N/A	3,650

With regard to Note 1, there were no exceedences of oils, fats and grease in any of the measurements taken from the discharged effluent as all results were returned as a less than the detectable limit. As a result it has not been possible to determine the actual mass emission.

The annual mass emissions are illustrated graphically in Figure 7.

**Figure 7: 2011 Mass Emissions at SW-1**



### **2.2.1 Summary of Non-Compliance for Discharge to Water**

There were no non-compliant samples recorded during the 2011 monitoring period, giving an overall percentage compliance rate of 100%.

All BOD, COD, Suspended Solids, Total Nitrogen, Nitrates (as N), Oils, Fats, Greases, Total Phosphorous, Molybdate Reactive Phosphate, Temperature, pH and Total Ammonia (as N) results were fully compliant during the 2011 reporting period.

Notwithstanding the reduction in the volumetric discharge between 2010 and 2011 (<5%) there has been significant decreases in BOD, total phosphorous, nitrate, total nitrogen and ammonia mass emission from the site. This represents a significant improvement in the quality of water discharged to surface water.

## 2.3 Surface Water Monitoring Summary

Surface water runoff collected from “clean” yard and roof areas discharges by gravity to the Mill Stream at emission point Ref’s SW-2, SW-3, SW-4, SW-5, SW-6, SW-7, SW-8, SW-9, SW-10, SW-11 & SW-12.

In accordance with Condition 6.18 of the facilities IPPC Licence, KIF Newmarket has installed a divert system to direct water to the WWTP if a trigger value is exceeded. The total volume of water discharged to the Mill Stream at SW-2 is set out in Table 6.

**Table 6: 2011 Discharge to Surface Water**

<b>Emission Point Reference:</b>	SW-2
<b>Name of Receiving Water:</b>	Rampart Stream (via Mill Stream)
<b>Total Volume (2010)</b>	7268 m <sup>3</sup>
<b>Total Volume (2011)</b>	22,881 m <sup>3</sup>

As surface water discharge points SW-3 to SW-12 discharge to the Mill Stream beneath the site, the Agency proposed that water monitoring samples be taken upstream of monitoring points SW-3 and SW-2 as an alternative. The monitoring points used to assess surface water quality are MS1, MS2 & MS3.

Analysis of surface water was carried out on a weekly basis for pH, COD and Molybdate Reactive Phosphate (MRP) in 2011. The monthly average for each parameter is presented in Table 7. It is noted that although MRP was analysed throughout the year, the results obtained from in house monitoring over estimate the MRP concentration, as a result, all MRP analysis has been undertaken at an external laboratory since September.

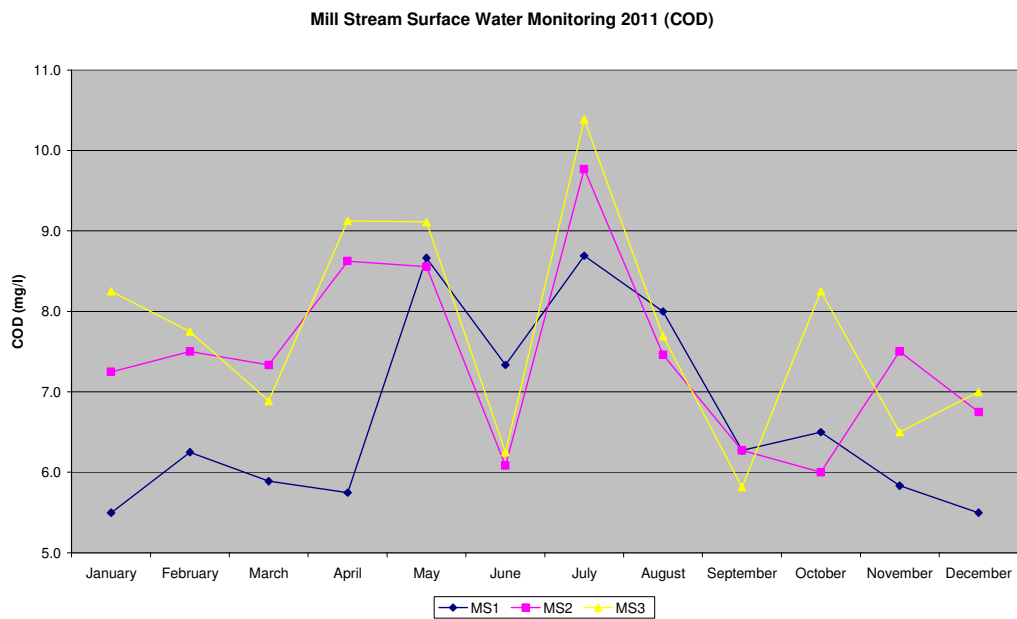
**Table 7: Mill Stream Surface Water Monitoring Results 2011**

Month	COD (mg/l)			pH		
	MS1	MS2	MS3	MS1	MS2	MS3
Jan	5.5	7.3	8.3	7.7	7.6	7.8
Feb	6.3	7.5	7.8	7.3	7.5	7.3
Mar	5.9	7.3	6.9	7.5	7.4	7.5
April	5.8	8.6	9.1	7.5	7.5	7.5
May	8.7	8.6	9.1	7.6	7.7	7.5
June	7.3	6.1	6.3	7.5	7.6	7.5
July	8.7	9.8	10.4	7.2	7.2	7.2
Aug	8.0	7.5	7.7	7.2	7.3	7.3
Sept	6.3	6.3	5.8	7.5	7.4	7.4
Oct	6.5	6.0	8.3	7.5	7.5	7.5
Nov	5.8	7.5	6.5	7.5	7.5	7.4
Dec	5.5	6.8	7.0	7.4	7.4	7.4

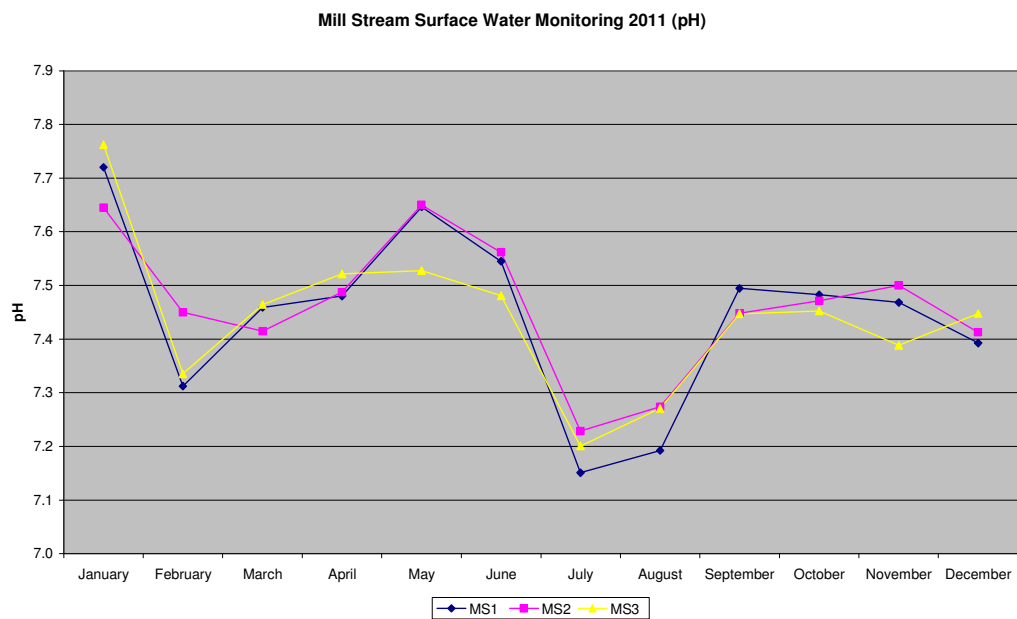
The result recorded at each of the monitoring points (MS1,2 &3) have been graphed to demonstrate the fate of water quality as it passes through the site.



**Figure 8: 2011 Mill Stream Surface Water Monitoring Results (COD)**



**Figure 9: 2011 Mill Stream Surface Water Monitoring Results (pH)**



Monitoring results recorded for pH do not indicate significant change as the Mill stream passes through the site.

In respect of the monthly COD analysis, monitoring does not indicate a significant change or deterioration in COD as water passes through the site.

Visual inspections were carried out on a routine basis to support the analytical measurements. There was no visual or olfactory evidence to suggest contamination of surface water.

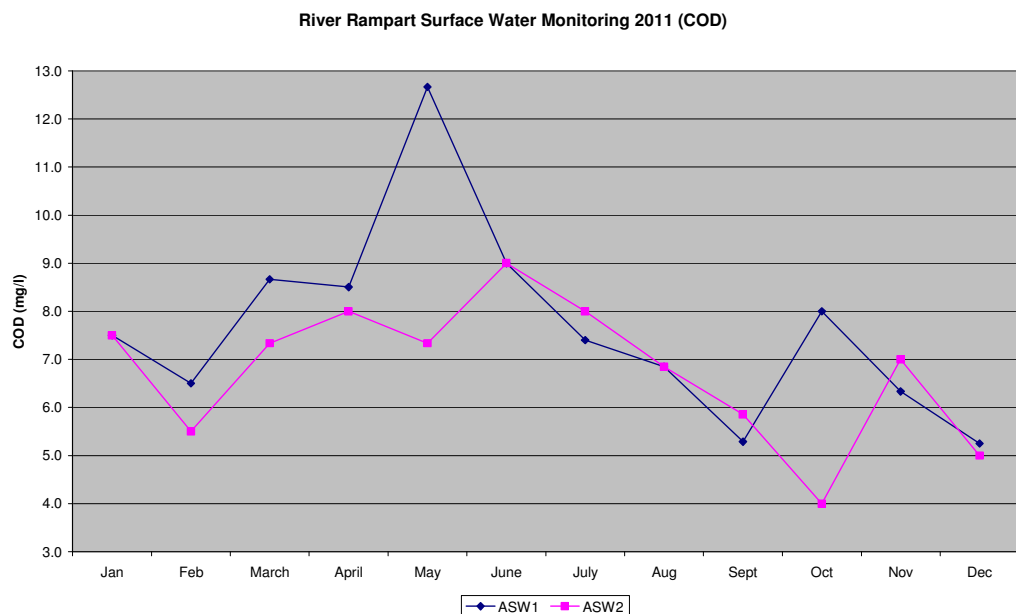
In addition to surface water monitoring undertaken on the Mill Stream, surface water monitoring was also undertaken at points above and below the point of convergence of the Mill Stream and the Rampart Stream.

The reference for these measurement points is ASW1 & ASW2. A summary of the monitoring results is presented in Table 8 below.

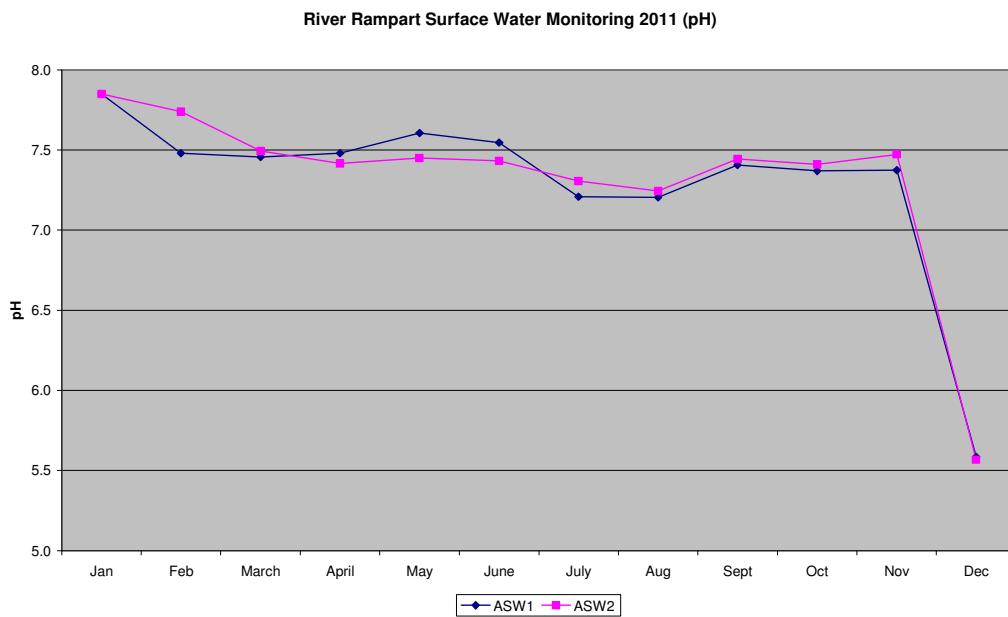
**Table 8: River Rampart Surface Water Monitoring Results 2011**

Month	COD (mg/l)		pH	
	ASW1	ASW2	ASW1	ASW2
Jan	7.5	7.5	7.9	7.9
Feb	6.5	5.5	7.5	7.7
March	8.7	7.3	7.5	7.5
April	8.5	8.0	7.5	7.4
May	12.7	7.3	7.6	7.5
June	9.0	9.0	7.5	7.4
July	7.4	8.0	7.2	7.3
Aug	6.8	6.8	7.2	7.2
Sept	5.3	5.9	7.4	7.4
Oct	8.0	4.0	7.4	7.4
Nov	6.3	7.0	7.4	7.5
Dec	5.3	5.0	7.4	7.4

**Figure 10: 2011 Rampart Stream Surface Water Monitoring Results (COD)**



**Figure 11: 2011 River Rampart Surface Water Monitoring Results (pH)**



The monitoring results returned from surface water monitoring of the Rampart Stream do not indicate any negative impact on pH & COD as a result of the discharge. Visual examinations which were undertaken did not identify any impact on water quality.

### 2.3.1 Summary of Non-Compliance for Surface Water Monitoring

There are no emission limit values for surface water parameters as set out in the IPPC Licence. However a trigger value is assigned to the SW-2 discharge, there was no exceedence of this trigger value in 2011 and as a result no requirement to divert water to the WWTP.

## 2.4 Noise

Condition 6.14 of the IPPC Licence requires KIF Newmarket to undertake a noise survey biannually of site operations.

Noise monitoring was undertaken in June and October 2011 while regular operations were being undertaken at the site.

A summary of the findings of the noise monitoring survey are presented in Tables 9, 10, 11 and 12.

**Table 9: Noise Monitoring Summary (Day Time) – June 2011**

Location Reference	Day Time Monitoring			IPPC Licence Emission Limit Value
	L <sub>Aeq</sub>	L <sub>A90</sub>	L <sub>A10</sub>	
N 1	56.2	52.0	56.7	55 L <sub>Aeq</sub>
N 2	53.9	49.9	51.5	
N 3	59.7	56.2	61.1	
N 4	53.2	51.9	54.2	
N 5	50.2	47.1	51.5	
N 6	54.3	52.6	55.5	
NSL2	50.0	43.4	52.2	
NSL3	48.8	44.6	50.8	
NSL4	64.1	46.8	67.1	

**Table 10: Noise Monitoring Summary (Night Time) – June 2011**

Location Reference	Night Time Monitoring			IPPC Licence Emission Limit Value
	L <sub>Aeq</sub>	L <sub>A90</sub>	L <sub>A10</sub>	
N 1	51.2	49.4	53.1	45 L <sub>Aeq</sub>
N 2	50.2	47.8	51.4	
N 3	54.6	53.2	55.4	
N 4	51.2	49.5	52.1	
N 5	48.6	45.4	49.9	
N 6	49.1	48.1	49.4	
NSL2	49.1	43.6	46.8	
NSL3	47.3	44.1	47.4	
NSL4	46.1	36.1	49.5	

**Table 11: Noise Monitoring Summary (Day Time) – October 2011**

Location Reference	Day Time Monitoring			IPPC Licence Emission Limit Value
	L <sub>Aeq</sub>	L <sub>A90</sub>	L <sub>A10</sub>	
N 1	52.6	51	53.3	55 L <sub>Aeq</sub>
N 2	50.7	49.5	51.4	
N 3	58.6	55.9	57.9	
N 4	51.5	49.1	52.6	
N 5	49.4	46.7	50.6	
N 6	54.2	52.7	55.6	
NSL2	55.8	47.1	55.8	
NSL3	47.7	43.8	50.9	
NSL4	64.6	42.8	68.8	

**Table 12: Noise Monitoring Summary (Night Time) – October 2011**

Location Reference	Night Time Monitoring			IPPC Licence Emission Limit Value
	L <sub>Aeq</sub>	L <sub>A90</sub>	L <sub>A10</sub>	
N 1	42.6	40.1	44.3	45 L <sub>Aeq</sub>
N 2	49.4	48.7	49.9	
N 3	54.2	53.7	54.7	
N 4	49.9	47.2	50.9	
N 5	45.8	43.6	46.8	
N 6	50.4	49.3	50.9	
NSL2	42.6	41.3	43.4	
NSL3	44.7	40.5	46.1	
NSL4	50.8	35.7	41.5	

Noise levels recorded at boundary locations and at Noise Sensitive Locations (NSL's) during the June survey were generally in compliance with the day time noise ELV's with the exception of boundary monitoring point N3. However, a measurement taken at a point north of N3 (NSL3) was below the daytime emission limit value, suggesting that there is no significant noise impact from the facility on noise sensitive locations.

Noise levels measured at boundary locations during the June night time monitoring survey were in exceedence of the ELV's, however, measurements taken at NSL's were compliant with the night time ELV (L<sub>A90</sub>), demonstrating that there is no significant noise impact from facility operations at sensitive locations.

Noise levels recorded in the day time October survey at boundary locations and at NSL's were in compliance with noise ELV's with the exception of boundary monitoring point N3. However, a measurement taken at NSL3 north of N3 was below the daytime emission limit value, indicating that there is no significant nuisance noise at noise sensitive locations.

Noise levels recorded in the October night time survey at boundary locations N2, 3, 4, and 6 were in exceedence of the licence night time ELV's. It noted that there are no noise sensitive receptors at these monitoring points. In order to determine the noise impact from the facility, monitoring was undertaken at the NSL's close to the facility boundary. All of the monitoring results were found to be below the noise emission limit value and as a result, the facility was not considered to be causing a nuisance.

In summary, noise monitoring measurements taken at boundary locations resulted in exceedences at some points however did not cause noise emission level likely to cause impact at noise sensitive locations. This fact is reinforced by the absence of any noise complaints at the facility in 2011 or other years.

## **2.5 Tank and Pipeline Inspection**

KIF Newmarket undertake monthly visual inspections of all tanks and bunds at the facility. On an annual basis a hydrostatic test is undertaken on all bunds and tanks at the WWTP.

All tanks at KIF Newmarket tested in 2011 passed the hydrostatic tests. KIF Newmarket carried out pipeline inspections in the first quarter of 2011 and a report on this test is available on site for inspection. A map of the drains at the site is also available.

A summary of the pipelines inspected and the repairs undertaken are provided in Attachment A

.

## 2.6 Groundwater Monitoring Summary

Groundwater monitoring was undertaken at the KIF facility in May and October during operational periods at the facility. Groundwater samples are taken from two wells at the site and spring which rises at the back of the Dry Goods Store.

A summary of the monitoring results are provided in Tables 13 & 14.

**Table 13: Water Chemistry Results at GW2, 3 and Field Spring (GW4)  
(May)**

Parameter	Units	GW2	GW3	Spring	S.I. No 9 of 2010	EPA IGV's
<b>Field Results</b>						
pH	pH units	7.36	6.77	7.28	-	>6.5 - <9.5
Conductivity @20°C	µs/cm	453	350	338	1,875	1000
ORP		102.8	147.9	160.8	-	-
TDS	ppm	294	227	219	-	-
Temperature	°C	12	12	12	-	-
<b>Laboratory Results</b>						
Bicarbonate as CaCO <sub>3</sub>	mg/l	130	129	83	-	-
Carbonate as CaCO <sub>3</sub>	mg/l	<1	<1	<1	-	-
Ammonical Nitrogen as N	mg/l	0.04	<0.03	<0.03	0.175	0.15
ORP as P	µg/l	389	352	222	1,875	1000
Conductivity @20 °C	µs/cm	<5	<5	<5	-	-
Phosphorous	µg/l	23.83	16.16	13.01	187.5	200
Sulphate	mg/l	28.8	26	15.2	187.5	30
Chloride	mg/l	2.7	13.3	0.4	37.5	25
Nitrate	mg/l	36.7	36.8	29.7	-	200
Calcium	mg/l	23	19	10.2	150	150
Sodium	mg/l	11	8.5	5.6	-	50
Magnesium	mg/l	2.6	2.6	1.1	-	5
Potassium	mg/l	<20	<20	<20	-	200
Total dissolved iron	µg/l	130	129	83	-	-

**Table 14: Water Chemistry Results at GW2, 3 and Field Spring (GW4)  
(October)**

Parameter	Units	GW2	GW3	Spring	S.I. No 9 of 2010	EPA IGV's
<b>Field Results</b>						
pH	pH units	7.77	7.35	7.27	-	>6.5 - <9.5
Conductivity @20°C	µs/cm	380	297	218	1,875	1000
ORP		114.9	127.3	165.2	-	-
TDS	ppm	246	192	141	-	-
Temperature	°C	10.7	10.9	11	-	-
<b>Laboratory Results</b>						
Bicarbonate as CaCO <sub>3</sub>	mg/l	146	116	89	-	-
Carbonate as CaCO <sub>3</sub>	mg/l	<1	<1	<1	-	-
Ammonical Nitrogen as N	mg/l	0.04	0.02	0.02	0.175	0.15
ORP as P	µg/l	<0.01	<0.01	<0.01	0.035	-
Conductivity @20 °C	µs/cm	334	311	226	1,875	1000
Phosphorous	µg/l	<5	6	30	-	-
Sulphate	mg/l	15.83	19.17	12.63	187.5	200
Chloride	mg/l	25.9	24.2	11.9	187.5	30
Nitrate	mg/l	0.3	1.5	0.6	37.5	25
Calcium	mg/l	31.7	32.7	31.0	-	200
Sodium	mg/l	25.4	20.6	8.6	150	150
Magnesium	mg/l	10.4	7.5	4.7	-	50
Potassium	mg/l	2.7	2.8	1.0	-	5
Iron	µg/l	<20	<20	34	-	200

Results from water monitoring undertaken in May and October are consistent in each monitoring round, indicating that the quality of water in the aquifers between monitoring periods has shown no significant change.

Ground water quality monitoring undertaken at three locations at the KIF Newmarket facility indicate high quality and shows no signs of failing to meet any of the guideline values set out in the European Communities Environmental Objective (Groundwater) Regulations S.I. No. 9 of 2010.

Overall, results show ground water quality to be high quality and not negatively influenced by activities of the KIF Newmarket facility.



## **2.7 Waste Management**

Management of solid non-hazardous and hazardous wastes are recorded in accordance with Condition 8 of the IPPC Licence.

A summary of all waste together with the details of the disposal contractor are presented in Table 10.

**Table 15: Summary Waste of Arisings 2011**

<b>EWC Code</b>	<b>Hazardous (Yes/No)</b>	<b>EWC Description of Waste</b>	<b>KIF Newmarket Description</b>	<b>Quantity (t/year)</b>	<b>Disposal/Recovery Code</b>	<b>Location of Disposal/Recovery</b>	<b>Name of Waste Disposal Recovery Contractor</b>
15 01 02	No	Plastic Packaging	Plastic	2.11	R3	Off-site Ireland	Cork Recycling Company WFP-CK-09-0022-02
20 03 01	No	Mixed Municipal Waste	General Waste	41.2	D1	Off-site Ireland	Munster Waste Management WFP-CK-09-0032-02
20 01 01	No	Paper & Cardboard	Cardboard	4.7	R3	Off-site Ireland	Glenanore Cartons WFP-CK-09-0008-01
20 01 01	No	Paper & Cardboard	Cardboard	35	R3	Off-site Ireland	Cork Recycling Company WFP-CK-09-0022-02
02 05 02	No	Sludge from Effluent Plant.	Sludge	863.2	R3	Off-site Ireland	Cremin Compost, WFP/ LK/ 2009/ 23A/ R1
02 01 10	No	Waste Metal	Stainless Steel	2.84	R4	Off-site Ireland	Cork Metal Company Ltd., CK(s) (491/07
17 06 05	Yes	Construction materials containing asbestos.	Asbestos	10.98	D1	Off-site Ireland	Oxigen Environmental Ltd, Dublin 22, W0208-01.

The waste arisings from KIF Newmarket are for the reporting period from the 1<sup>st</sup> of January to the 31<sup>st</sup> of December 2011.

KIF Newmarket has a strong commitment to recycling at the site. Waste is segregated where possible with KIF Newmarket operating a number of recycling skips at the plant. Cardboard is baled onsite before being sent off site for recovery, sludge is sent for composting and waste metal, plastics and glass are recovered.

### 2.7.1 Organic Waste Management

Organic waste at the facility arises from the treatment of process wastewater from activities at the facility.

Liquid effluents from the processing and washing operations drain to an on-site wastewater treatment plant for treatment before discharge to surface water. The treatment plant is based on biological treatment (activated sludge) system. Settled solids from the treatment plant are conveyed to a belt press where polyelectrolyte is added to allow excess water from the sludge to be removed. The quantity of sludge removed off site is directly related to the volume and quality of wastewater treated at the plant.

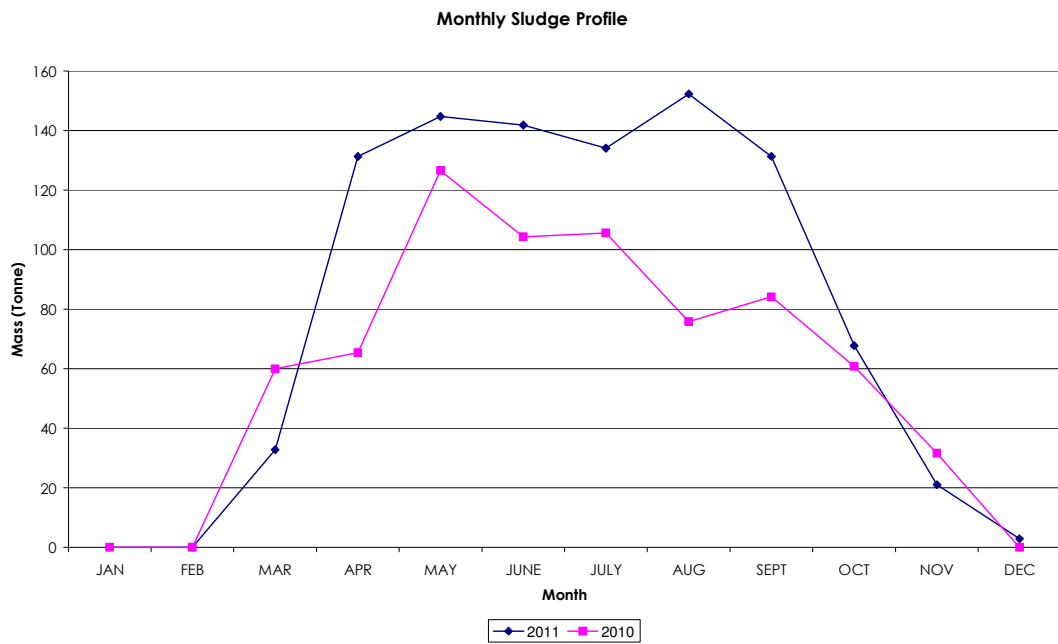
In addition to activated sludge, the treatment plant produces sludge through Dissolved Air Flotation (DAF) on the inlet effluent.

The combined quantity of organic waste generated during the 2011 reporting period was approximately 863 tonnes. Organic waste is collected by a certified waste disposal company who compost the waste sludge.

**Table 16: Organic Waste Arising**

Month	Total (Tonnes) 2010	Total (Tonnes) 2011
January	0	0.0145
February	0	0
March	59.96	32.78
April	65.34	131.3
May	126.62	144.718
June	104.32	141.883
July	105.58	134.14
August	75.8	152.296
September	84.16	131.38
October	60.76	67.721
November	31.58	21.025
December	0	2.84
<b>Total (T)</b>	<b>714.12</b>	<b>863.2</b>

**Figure 12: Graphical presentation of monthly organic waste arisings 2010 & 2011**



The mass of sludge sent off site is directly related to plant throughput. The table of monthly sludge arisings and graphical representation on Figure 12 coincides with milk throughput during the 2010 & 2011 reporting period.

## 2.8 Resource Consumption

Data relating to energy consumption (electricity and fuel oil) and water for the 2011 reporting period are summarised in the following sections.

Data on the resource use during the 2011 reporting period is presented as totals per tonne of product produced at the facility and is compared to 2010 progress where appropriate.

### 2.8.1 Summary Energy Consumption

Energy, both as electrical power and fuel oil represents a significant input to processing activities at KIF Newmarket and is closely tracked. Tracking and evaluation of energy data allows targets to be set and the development of programmes for monitoring energy usage and identifying improvements in energy efficiency.

For the most part, energy consumption is related to plant throughput where fuel consumption in the onsite steam raising boilers is related to steam demand at the plant. A significant proportion of steam demand is associated with the steam demand for pasteurisation and Cleaning in Place (CIP). It is important to note that similar volumes of steam are used during short and long running days as a result of a necessity to clean all systems regardless of the volume of material processed, which can potentially misrepresent energy efficiency statistics if there is a significant number of short operating days throughout the reporting year.

A significant portion of the electrical power demand is associated with the operation of refrigeration plants for provision of low temperatures in cold stores. This load may remain relatively static for a range of throughputs as a similar power demand arises irrespective of cold store occupancy. During production all pumps and automated equipment, like conveyors, shredders and packaging equipment are running on electrical energy.

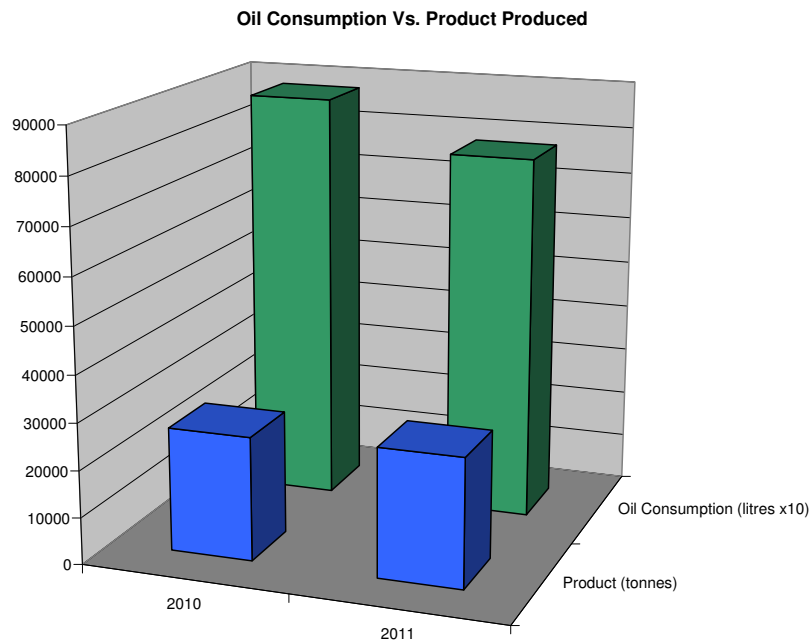
Table 17 provides information relating to both oil and electrical consumption for the 2011 reporting period. Oil & electricity consumption can be related to the tonnes of product produced during the same period.

**Table 17: Summary Oil and Power Data (2010 & 2011 Reporting Period)**

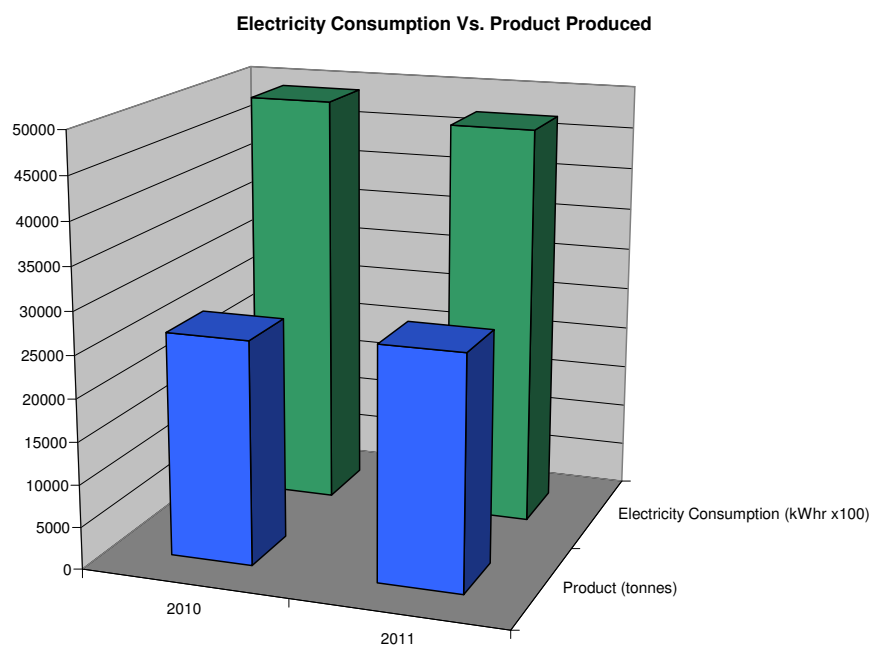
Year	Oil Consumption (L)		Electricity Consumption (kW)	
	Total Usage	L/Tonne	Total Usage	kW/Tonne
<b>2010</b>	876599	33.24	4901621	185.8
<b>2011</b>	777066	28.30	4715090	172.83

Oil consumed and Electricity consumed during the 2010 & 2011 reporting period versus the quantity of product produced during the same period is graphically presented in Figures 13 & 14 below.

**Figure 13: Oil Consumption for the 2010 & 2011 Reporting Period**



**Figure 14: Electricity Usage for the 2010 & 2011 Reporting Period**



As can be seen in Table 17 and Figures 13 and 14 there has been a reduction in both the oil and electricity consumed on site in 2011. The reasons for the improvements in energy consumption at the site arise as a result of regular internal targets to produce product more efficiently at the site. Notwithstanding the improvements in energy efficiency at the facility, it is noted that longer running days and processing of intermediates to final products (processing of whey on site) has a

significant influence on the annual tonnage figures for the site and consequently on the production efficiency.

## 2.8.2 Water Usage

Water consumption for the site for the 2011 reporting period is summarised in Table 18 and graphically presented on Figure 15. Plant water demand is supplied from on-site boreholes, with a supply from the town mains used when required throughout the production year.

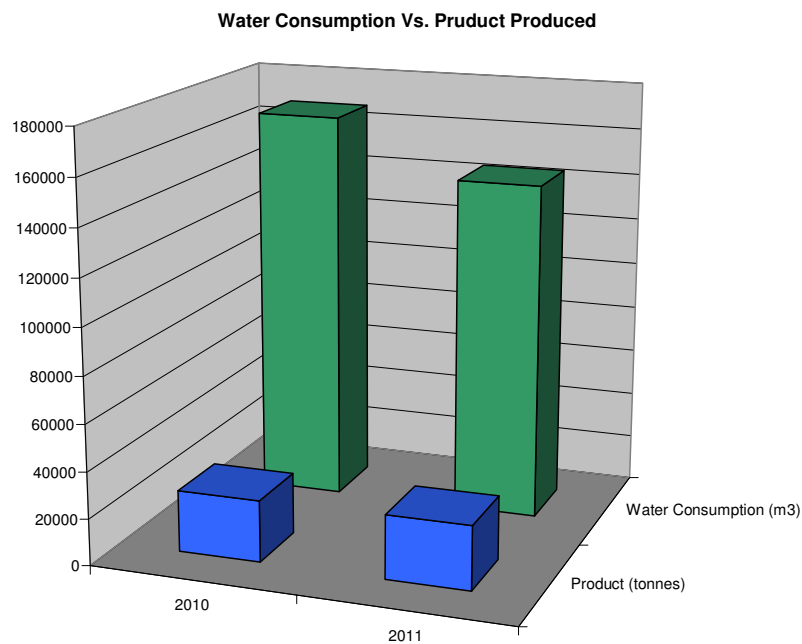
Water use at the facility is predominantly used for boiler feed water and CIP and other washing activities at the site. Although water consumption is directly related to product throughput, it is noted that similar volumes of water are used during short and long running days as all equipment used needs to be cleaned at the end of the running day.

**Table 18: Plant Water Consumption**

Year	Water Consumption (m <sup>3</sup> )	
	Total Usage	m <sup>3</sup> /Tonne
2010	168,011	6.37
2011	153,927	5.61

Water consumed during the 2010 & 2011 reporting period versus the quantity of product produced during the same period is graphically presented in Figure 15 below.

**Figure 15: Water Consumption for the 2010 & 2011 Reporting Period**



It is apparent from the data presented in Table 18 and Figure 15 that the volume of water consumed in 2011 decreased significantly in 2011 when compared to 2010. These reductions were achieved through

achievement of the facilities targets to improve the efficiency of water use in all processes and activities at the site. It is acknowledged that not all products undergo the same levels of processing and a result less equipment is use. Ultimately this results in lower volumes of water used for production of certain products (Whey concentrate vs. Cheddar Cheese).

## **2.9 Third Party Inspections**

### **2.9.1 EPA Monitoring Inspections**

KIF Newmarket received an inspection by the Agency in July 2011. This was the only site inspection undertaken by the Licencing Officer during 2011.

Agency representatives also visited the site in April and October to take samples of discharges to water and monitored the boiler stack emissions on the 17<sup>th</sup> of May 2011.

No non compliances were identified for any of the test parameters analysed on water samples taken at the facility. However, sampling undertaken on the boiler stack emissions found the particulates to exceed the current licence limit value. It is noted that KIF Newmarket are currently working with the Agency to resolve this issue.

### **2.9.2 Site Inspections**

The EPA carried out an announced site inspection (non-monitoring) at the plant on the 14<sup>th</sup> of July 2011.

The inspection concentrated on implementation and compliance with Conditions and Schedules of IPPC Licence P0793-01 issued on the 30<sup>th</sup> of September 2009. The site inspection covered the firewater risk assessment report undertaken for the site, underground pipelines integrity checks, energy efficiency audit and water monitoring results.

The Agency inspection did not raise any non compliance. However 5 observations were raised. A summary of the observations raised are presented in Table 19.



**Table 19: Summary of inspection observations and current status of corrective actions implemented by KIF Newmarket site inspection 14/07/11.**

Ref.	IPPCL Ref.	Observation	Corrective Action	Status
OBS/1	9.3	<p><b>Firewater Retention</b> The Agency reviewed the firewater retention report during a site walkover and requested that a revised report be submitted to the Agency incorporating any proposed mitigation measures.</p>	<p>KIF Newmarket has reduced the site contamination risk substantially with the removal of an asbestos roof at the site from the Dry Goods Store. KIF is currently reviewing the water collection system in the warehousing section of the site.</p>	Open
OBS/2	6.10	<p><b>Underground Drainage Integrity</b> The Agency reviewed reports and maps available on drainage inspections. The Agency requested that all remaining tanks and pipelines be inspected in 2011 and repairs made where necessary. New pipelines installed to direct sanitary waste to the public sewer to be integrity tested.</p>	<p>KIF Newmarket has submitted a report and drawings to the Agency on the underground tank and pipeline assessments. KIF Newmarket repaired all accessible pipelines which were identified as requiring repair.</p>	Agency observations addressed-integrity testing of pipelines is an ongoing licence requirement.
OBS/3	3.6	<p><b>Emergency Generator Fuel Storage Tank</b> Agency identified a risk to groundwater, surface water or soil in the event of oil storage lines at the facility rupturing.</p>	<p>KIF Newmarket carried out a detailed risk assessment of the oil storage tank area. Corrective actions were put in place to reduce risk. Corrective actions included the erection of additional barriers and maintenance checks on the pipework.</p>	Closed. Information submitted to the Agency.

Ref.	IPPCL Ref.	Observation	Corrective Action	Status
OBS/4	7.2	<p><b>Energy Efficiency Audit</b> The Agency commented on the recommendations identified in the energy efficiency audit and noted that the recommendations of the Energy Efficiency audit are included in the sites EMP.</p>	<p>The recommendations of the energy efficiency audit have been included in the environmental management programme at the site.</p>	Ongoing
OBS/5	3.8	<p><b>Stormwater Bypass Chamber</b> Agency requested that relevant documentation on the installation of a bypass chamber at the site is submitted to the Agency.</p>	<p>Relevant documentation was submitted to the Agency.</p>	Closed

## **2.10 Complaints Summary**

There were no complaints reported to KIF Newmarket during the 2011 reporting period.

## 2.11 Reported Incidents Summary

There were no environmental incidents reported for the 2011 monitoring period at the KIF Newmarket facility. However, it is noted that particulate emission limit values associated with the steam raising boilers were exceeded in 2011; the facility is working with the Agency to resolve this issue.

The exceedence of the emission limit values arises as a result of inappropriate emission limit values in the licence for particulates based on the fuel burned at the site. KIF Newmarket have installed particulate removal technology to reduce particulate levels, however a licence review will be required to assign appropriate emission limit values. The impact of the emissions from the boilers have been modelled and determined under worst case operating conditions not to cause any environmental impact.

## 2.12 Decommissioning and Residual Management

A Decommissioning and Residual Management Plan (DRMP) along with an Environmental Liabilities Risk Assessment (ELRA) have been prepared for the facility and submitted to the Agency for approval.

As set out in both the DRMP and ELRA, KIF Newmarket will ensure there is adequate financial provision and insurance cover to address any potential environmental liabilities, and decommission the site in the event of an unforeseen closure.

There have been no changes at the facility since the DCP was submitted to the Agency. The costs associated with closure and unknown liabilities are considered to still be reflective of the anticipated cost of closure any potential liabilities. Consequently, the DCP and ELRA are considered to be up to date and relevant for the current facility.

The facility has an Environmental Management Programme (EMP) in place. The EMP serves as a guidance document for facility staff and describes operational control and management practices that are applied at the facility. The EMP is also the core element of the Environmental Management System (EMS) for the facility and is designed to ensure that management of site activities complies with regulatory requirements and best practice. The EMS includes a detailed Accident Prevention and Emergency Response Procedure which sets out the steps to be taken in the event of an incident at the facility with the potential to cause environmental damage.

In addition to the above KIF Newmarket implements a comprehensive monitoring programme which will highlight any potential environmental incidents with the potential to cause environmental damage.

### **3.0 Environmental Management Programme**

Section 3 of the AER contains summary information on the KIF Newmarket Environmental Management Programme (EMP).

It is noted that both the EMP and Schedule of Objectives and Targets fall under the site Environmental Management System and accordingly, are included within a structured system of management review and periodic auditing by internal auditors.

#### **3.1 2011 EMP Summary Report**

The overall function of the Environmental Management Programme aims to plan, track and implement projects on site which lead to the overall achievement of KIF Newmarket's Environmental Policy.

It is noted that KIF Newmarket are an accredited ISO14001 site and consequently had an EMP in place prior to receiving the IPPC Licence.

The Environmental Management Programme is included as Attachment B.

**Attachment A**  
**Summary of Underground Pipeline Inspections**

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### **Attachment C Underground Pipeline Inspection**

A summary of underground pipeline inspection is provided below; where repairs were identified as being necessary they have been completed.

No.	Sewer Type	Description	Repair Required	Repair Complete	Status	Next Inspection
1	Foul	FMH0-AJ1	Yes	Yes	Pass	January 2014
2	Foul	AJ1-Stack	No	n/a	Pass	January 2014
3	Foul	F0-F1	Yes	Yes	Pass	January 2014
4	Foul	F1-F2	No	n/a	Pass	January 2014
5	Surface Water	S2-S2A	Yes	Yes	Pass	January 2014
6	Surface Water	S2A-S2B	No	n/a	Pass	January 2014
7	Process	PMH2-PMH1	No	n/a	Pass	January 2014
8	Process	PMH2-PMH3	No	n/a	Pass	January 2014
9	Process	PMH4-PMH3 (32.1)	No	n/a	Pass	January 2014
10	Process	PMH4-Balance TA	No	n/a	Pass	January 2014
11	Process	PMH3 (32.1)- PMH4 (32.2)	No	n/a	Pass	January 2014
12	Process	P TANK 2- P TANK 1	No	n/a	Pass	January 2014
13	Process	PMH5-PTANK 1	Yes	Yes	Pass	January 2014
14	Process	M Chamber-PMH5	Yes	Yes	Pass	January 2014
15	Process	MES CHAMBE-BAL TANK	No	n/a	Pass	January 2014
16	Process	PMH6-PMH5	No	n/a	Pass	January 2014
17	Process	PMH6-PMH7	No	n/a	Pass	January 2014
18	Process	PMH9-GULLY 1	No	n/a	Pass	January 2014
19	Process	PMH9-P TANK 1	Yes	Yes	Pass	January 2014
20	Process	PMH10-PMH11	No	n/a	Pass	January 2014
21	Process	PMH11-PTANK 2	No	n/a	Pass	January 2014
22	Process	PMH10-PMH13	No	n/a	Pass	January 2014
23	Process	PMH7-PMH8	No	n/a	Pass	January 2014
24	Process	PMH14- PMH15	Yes	Yes	Pass	January 2014

No.	Sewer Type	Description	Repair Required	Repair Complete	Status	Next Inspection
25	Process	PMH15- PMH 14	Yes	Yes	Pass	January 2014
26	Process	PMH15-PMH16	No	n/a	Pass	January 2014
27	Process	PMH14-P TANK2	Yes	Yes	Pass	January 2014
28	Process	PMH17-PMH5-14	Yes	Yes	Pass	January 2014
29	Foul	FMH4- TANK 01.2	No	n/a	Pass	January 2014
30	Foul	SEPTIC TAN- FMH4	Yes	Yes	Pass	January 2014
31	Foul	FMH4 – PMH5	Yes	Yes	Pass	January 2014
32	Foul	PMH5- FMH 4	Yes	Yes	Pass	January 2014
33	Foul	FMH3-SEPT TANK	No	n/a	Pass	January 2014
34	Foul	FMH2-FMH3	Yes	Yes	Pass	January 2014
24	Process	PMH14- PMH15	Yes	Yes	Pass	January 2014
25	Process	PMH15- PMH 14	Yes	Yes	Pass	January 2014
26	Process	PMH15-PMH16	No	n/a	Pass	January 2014
27	Process	PMH14-P TANK2	Yes	Yes	Pass	January 2014
28	Process	PMH17-PMH5-14	Yes	Yes	Pass	January 2014
29	Foul	FMH4- TANK 01.2	No	n/a	Pass	January 2014
30	Foul	SEPTIC TANK- FMH4	Yes	Yes	Pass	January 2014
31	Foul	FMH4 – PMH5	Yes	Yes	Pass	January 2014
32	Foul	PMH5- FMH 4	Yes	Yes	Pass	January 2014
33	Foul	FMH3-SEPT TANK	No	n/a	Pass	January 2014
34	Foul	FMH2-FMH3	Yes	Yes	Pass	January 2014



**Attachment B**  
**2012 Environmental Management Programme**

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# **Kerry Ingredients & Flavours EMEA-Newmarket Environmental Management Programme**

## **Environmental Management Programme**

**2012**

**IPPC Licence Reg. No. P0793-01**

Doc. Reference:  
ISO Ref: 4.3.3  
Revision: No 1.Issue No. 1

Prepared By: Josephine Angland  
Issue Date:27/03/2012



## INTRODUCTION

This document comprises the Environmental Management Programme (EMP) for Kerry Ingredients & Flavours EMEA-Newmarket.

The EMP includes the Company Environmental Objectives and Targets, the means by which these will be achieved, and associated timescales.

The EMP will be reviewed and updated in accordance with EP1: Objectives and Targets Procedures.

## OBJECTIVE

The objective of this document is to set out the environmental objectives and targets specified under the Kerry Ingredients & Flavours EMEA-Newmarket Environmental Management System (EMS) and to address the requirements of IPPC Licence Reg. No. P0793-01.

## DEFINITIONS

Abbreviation	Definition
EMP	Environmental Management Programme
EMS	Environmental Management System
Environmental Objective	Overall environmental goal, arising from the Environmental Policy.
Environmental Target	Detailed performance requirement, quantified where practicable.

Management Team	Position	Initials
Michael O'Connell	Engineering Manager	MO'C
Josephine Angland	Environmental Manager	JA
David Casey	Production Manager	DC
Bernard O'Connor	Site Manager	BO'C
Jeffrey Collins	Quality Manager	JC
Eileen Geaney	Environmental Technician	EG
Sinead O'Doherty	Environmental Technician	SO'D



## Index of Objectives and Targets

Number	Objective	Target
1	Enhance the existing Environmental Management System (EMS) at Kerry Ingredients	To continue to enhance Environmental Management System (EMS) for the site.
2	Maintain Environmental communication between all employees at Kerry Ingredients & Flavours EMEA-Newmarket	<p>To ensure that all employees are made aware of requirements of the site environmental system.</p> <p>Review Environmental performance of the facility on an annual basis, establish opportunities for improvement to the Environmental Management System. Ensure compliance with Condition 2.2.2.3 of IPPC Licence No. P0793-01.</p>
3	Improve control on abatement equipment.	Install monitoring equipment on critical points of abatement equipment. Ensure compliance with Condition 3.3 of IPPC Licence No. P0793-01
4	Enhance existing emergency preparedness plans and infrastructure.	To ensure that emergency response procedures and infrastructure at NCC meets accepted standards and fulfils our IPPC Licence requirements.
5	Maintain the quality of both ground and surface water to the highest possible standard.	<p>Improve infrastructure and operation at the the waste water treatment plant.</p> <p>Highlight and reduce where possible any potential negative impacts on both ground and surface water quality.</p>

Number	Objective	Target
6	Waste Reduction	Identify opportunities for waste reduction and ensure compliance with IPPC Licence and other statutory requirements.
7	Reduce natural resource consumption	Continue to investigate ways of reducing water consumption at the site.  Ensure that water consumption levels per tonne of cheese produced remain among the lowest within the similar type processes.
8	Improve energy efficiency.	Identify and implement where possible measures to reduce energy consumption.
9	Reduce Particulate Emissions from the onsite process boilers	Reduce particulate emissions from boilers through use of particulate removal technology.
10	Ensure noise from the facility does not cause a nuisance for the public.	Maintain noise emissions below permitted licence limit values at all times.
11	Chemical Usage	Reduce chemical usage on site per tonne of product.



Task	Objective	Target	Plan	Timescale	Responsibility	Status
1	<b>Enhance the existing Environmental Management System (EMS) at Kerry Ingredients &amp; Flavours EMEA-Newmarket.</b>	To continue to enhance Environmental Management System (EMS) for the site.	Compile Objectives, target and EMP review.	Dec-12	JA	Ongoing
			Ensure high marking in Regional Environmental Audit scoring.	Dec-12	JA	In progress
1.1			Undertake Gap analysis of Kerry Policies, so that Kerry Environmental standards are adopted throughout the site.	Dec-12	JA	In progress



Task	Objective	Target	Plan	Timescale	Responsibility	Status
2	<b>Maintain Environmental communication between all employees at Kerry Ingredients &amp; Flavours EMEA-Newmarket</b>	To ensure that all employees are made aware of requirements of the site environmental system.	Provide environmental awareness training to all employees	Dec-12	JA. Area Supervisors	Ongoing-Annual Requirement
2.1		Review Environmental performance of the facility on an annual basis, establish opportunities for improvement to the Environmental Management System. Ensure compliance with Condition 2.2.2.3 of IPPC Licence No. P0793-01.	Conduct Annual Environmental Review Meetings. Review to include, environmental performance, internal and external communication on environmental matters, objectives, commitments in our environmental policy, changes at the facility which may effect the EMS, and opportunities for improvement at NCC.	Dec-12	MO'C,JA,B O'C,JC,DC	Ongoing-Annual Meeting

Task	Objective	Target	Plan	Timescale	Responsibility	Status
3	<b>Improve control on abatement equipment.</b>	Install monitoring equipment on critical points of abatement equipment. Ensure compliance with Condition 3.3 of IPPC Licence No. P0793-01	Review current controls on abatement equipment at the site. <i>Additional control may be required if particulate air emissions abatement system is installed on site boilers.</i>	Jan-11	JA, MO'C	Closed-All abatement equipment installed at the site. No monitoring equipment required on the Air Emissions Abatement equipment.
3.1			Install required monitoring equipment.	Feb-11	MO'C	Complete
3.2			All monitoring equipment shall be placed on the Equipment Calibration Schedule and be calibrated in accordance with Procedure: Issue with Withdrawal Procedure.	Dec-11	MO'C	Complete-Review undertaken of all environmental monitoring equipment in 3rd quarter 2010.
3.3			Undertake a full review of all controls on abatement equipment prior to annual environmental meeting review meeting. <i>Potential installation of flue gas treatment system in 2011.</i>	Dec-11	JA/MO'C	Complete-Refrigerated autosampler identified for collection and storage of SW-1 water sample.
3.4			Install any additional equipment which has been agreed at the annual environmental review meeting.	Apr-12	JA/MO'C	In progress-Refrigerated autosampler to be installed.
3.5			Install refrigerated autosampler for SW-1 discharge.	Apr-12	MO'C	Open



Task	Objective	Target	Plan	Timescale	Responsibility	Status
4	<b>Enhance existing emergency preparedness plans and infrastructure at Potential installation of flue gas treatment system in 2011.</b>	To ensure that emergency response procedures and infrastructure at KIF Newmarket meets accepted standards and fulfils our IPPC Licence requirements.	Review accident emergency policy annually.	Dec-12	JA	Ongoing-EP10 Accident Prevention and Emergency Response Procedure was reviewed on the 3/10/2011- Current Revision is Rev. 8
4.1			Undertake a risk assessment to determine if a fire-water retention facility is required. <i>Submitted to the Agency, further clarification submitted for approval.</i>	May-12	JA/MOC	Ongoing-Site Risk reduced through the removal of Asbestos off the site. Works to be undertaken at the site on drainage to ensure that there is no loss to subsurface.
4.2			Review the recommendations within the report.	May-12	MO'C,JA,B O'C,JC,DC	Ongoing-Programme in place to complete all
4.3			On agreement with the Agency set out a plan for implementing the recommendations of the fire water retention facility report.	Jun-12	JA/MO'C	In progress-Actions put in place, including the reduction of site risk through the removal of the Asbestos roof. Programme for handling firewater.
4.4			Review the fire water retention facility risk assessment after 5 years or after a significant change in infrastructure at the site.	Mar-14	JA	Ongoing
4.5			Review the oil interceptor risk assessment after 5 years or after a significant change within the surface water catchments at the site.	Mar-14	JA	Ongoing



Task	Objective	Target	Plan	Timescale	Responsibility	Status
4.6			Review the oil interceptor risk assessment after 5 years or after a significant change within the surface water catchments at the site.	Mar-14	JA	Ongoing
4.7			Close off redundant surface water gullies in the covered loading area.	Jun-12	MO'C	Plan in place to cover off gullies.

Task	Objective	Target	Plan	Timescale	Responsibility	Status
5	<b>Maintain the quality of both ground and surface water to the highest possible standard.</b>	Improve infrastructure and operation at the the plant. Highlight and reduce where possible any potential negative impacts on both ground and surface water quality.	Undertake Annual ground water monitoring as required in Schedule C of the site IPPC Licence.	Dec-12	JA	Ongoing-Annual groundwater monitoring undertaken.
5.1			Ensure that all discharges to water are in accordance with Schedule B of the facility IPPC Licence.	Dec-12	JA/MO'C	Ongoing-no non compliances recorded in 2011.
5.2			If works are undertaken on or around surface water drains any opportunity to reduce the number of emission points should be investigated.	Dec-12	JA	Ongoing
5.3			Gullies leading to storm water drains which are redundant to be closed off.	Jul-12	MO'C	In progress



Task	Objective	Target	Plan	Timescale	Responsibility	Status
6	<b>Waste Reduction</b>	Identify opportunities for waste reduction and ensure compliance with IPPC Licence and other statutory requirements.	Review waste reduction programmes which have been initiated at the site over the past 2 years. Highlight from monthly waste data and activities at the site where potential exists for further reductions.	Dec-12	JA	Ongoing-Waste minimisation is under continuous review at the facility.
6.1			Ensure that all staff have received training on waste reduction and segregation practices at the site.	Dec-12	JA	Complete-All Staff reviewed training. Any new employees at the facility will be provided with all environmental training.
6.2			Review annually waste reduction measures with a view to reducing annual waste production. Reuse of pallets as many times as possible prior to disposal.	Jan-12	MO'C,JA,B O'C,JC,DC	Ongoing-Waste reduced in 2011 below targets set for production.
6.3			Compactor installed at the site to facilitate the baling of cardboard before removal offsite.	Jun-11	MO'C,JA,B O'C,JC,DC	Complete-Cardboard baler in operation at the site since 2nd quarter of 2011.



Task	Objective	Target	Plan	Timescale	Responsibility	Status
7	<b>Reduce natural resource consumption</b>	To continue to investigate ways to reduce the consumption of raw water at the site.	Conduct quarterly reviews of the water reduction programme put in place at the site in 2009.	Ongoing	JA	Ongoing-Areas identified for more efficient operation of the CIP system have resulted in water reductions in 2011.
7.1			Investigate areas of the plant where permeate could be reused. Use permeate water quality data where appropriate to determine if it is fit for purpose.	Jul-11	MO'C,JA,C H,BO'C,JC, DC	Ongoing-Substitution of raw water with permeate will require detailed trials etc to be put in place.
7.2			Where uses have been identified on site for reusing permeate, undergo a trial to assess its practical applicability.	Dec-13	MO'C,JA,B O'C,JC,DC/ Site Management.	In progress-reuse of permeate from milk and milk derived products within the plant are currently being reviewed.
7.3		Ensure that water consumption levels per tonne of cheese produced remain among the lowest within the similar type processes.	Where improvements are made to washing technology and water usage within the cheese sector apply them where possible to processes at Newmarket Coop.	Jan-14	JA	Ongoing-Water volume used per tonne of product has been reduced in 2011. Further reductions to be sought in 2012.

Task	Objective	Target	Plan	Timescale	Responsibility	Status
8	<b>Improve energy efficiency.</b>	Identify and implement where possible measures to reduce energy consumption.	Develop a programme for implementing recommendations of energy efficiency audit.	May-11	JA/MOC	Implementation of energy efficiency recommendations in progress.
8.1			Install metering equipment to track energy usage on the site.	Jun-12	MO'C	In progress, details of steam, compressed air, electricity and oil are addressed as actions 8.4, 8.5, 8.6, 8.7 & 8.8
8.2			Undertake a review of air leakage and steam trap survey.	Dec-12	JA/MO'C	In progress-survey scheduled to be completed in 2012.
8.3			Roll out programme for energy reduction targets to be achieved over the next 5 years. Review progress of programme annually.	Sep-14	MO'C,JA,C H,BO'C,JC, DC	Ongoing-Installation of measurement system is the first phase of developing a detailed review of site energy use.
8.4			Installation of steam meters on each of the site boilers. Installation of boiler feedwater flow and flow to header tank.	Feb-12	MO'C	Complete



Task	Objective	Target	Plan	Timescale	Responsibility	Status
8.5			Installation of temperature sensors on boiler oil supply and feedwater lines.	Mar-12	MO'C	In progress-meters installed, commissioning works to be completed.
8.6			Installation of steam meters on each of the site boilers	Feb-12	MO'C	Complete
8.7			Installation of electricity meters and air flow meters on air compressors.	Apr-12	MO'C	In progress-meters installed, commissioning works to be completed.
8.8			Installation of electricity meters to record usage at Palletiser, Odenberg, Effluent Plant and Chilled Water Plant.	Apr-12	MO'C	In progress-meters installed, commissioning works to be completed.
8.9			Improve energy efficiency across all areas of the facility with a view to conserving fuel used and reducing the carbon emitted to atmosphere.	Dec-12	MO'C	In progress

Task	Objective	Target	Plan	Timescale	Responsibility	Status
9	<b>Reduce Particulate Emissions from the onsite process boilers</b>	Reduce particulate emissions from boilers through use of particulate removal technology.	Review performance of process boilers and particulate monitoring results. Identify if improvements that can be made to the levels of particulates emitted from the process boilers stacks. <i>Kerry Ingredients &amp; Flavours EMEA-Newmarket are currently communicating with the Agency on emissions to air from the facility.</i>	Sep-10	MO'C,JA,C H,BO'C,JC, DC	Complete-Particulate reduction technology has been installed at the site.
9.1			Prepare Air Dispersion Model for submission to the Agency to obtain agreement on revised emission limit values on particulate emissions from the site.	May-12	JA/MOC	Ongoing-Revised Model submitted to the Agency to demonstrate compliance with NAQS. EPA noted that a Licence Review would be necessary to make the required amendments to the licence.
9.2			On the basis of ongoing review of the particulate emissions, determine if there is scope for further reductions through evaluation of methods for reducing particulate emissions from the stacks.	Jan-14	MO'C,JA,B O'C,JC,DC	Ongoing-Particulate reduction technology to be installed at the site in the first quarter of 2012.





Task	Objective	Target	Plan	Timescale	Responsibility	Status
9.3			On the basis of management review meetings of particulate emissions from the boiler stacks initiate an agreed programme with an aim of reducing particulate emissions from the plant. On approval of revised emission limit values for particulates, install particulate abatement equipment on both MFO fired boilers.	Dec-12	JA/MOC	Ongoing-Particulate reduction technology to be installed at the site in the first quarter of 2012



Task	Objective	Target	Plan	Timescale	Responsibility	Status
10	<b>Ensure noise from the facility does not cause a nuisance for the public.</b>	Maintain noise emissions below permitted licence limit values at all times.	Undertake noise survey at the site in accordance with the IPPC licence requirements.	Dec-12	JA	Ongoing-Survey completed in 2011. Surveys re-scheduled for 2012
10.1			Provide refresher training to all employees to ensure that all noise containment measures are followed.	Sep-12	JA Area Managers/ Supervisors	Ongoing
10.2			Review the results of the noise survey, if necessary put a programme in place for noise reduction.	Aug-12	MO'C,JA,B O'C,JC,DC	
10.3			Where appropriate to do so roll out noise reduction programme, with reductions to be achieved on an annual basis over the next 5 years.	Sep-14	MO'C,JA,B O'C,JC,DC	Ongoing



Task	Objective	Target	Plan	Timescale	Responsibility	Status
11	<b>Chemical Usage</b>	Reduce Chemical Usage on site per tonne of Product.	Capture all possible data in relation to chemical usage, CIP system temperatures etc.	Dec-11	MO'C,JA,B O'C,JC,DC	Complete-Actioned through 11.1
11.1			Review of CIP function and make up.	Mar-11	MO'C/DC	Complete-Rebalanced CIP tanks, reduced caustic washing, centralised supply of chemicals for washing.

**Attachment C**  
**2011 Pollution Register Transfer Register**

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Environmental Protection Agency

| PRTR# : P0793 | Facility Name : Newmarket Co-Operative Creameries Limited |  
 Filename : P0793\_2011.xls | Return Year : 2011 |

[Guidance to completing the PRTR workbook](#)

# AER Returns Workbook

Version 1.1.13

<b>REFERENCE YEAR</b>	2011
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**1. FACILITY IDENTIFICATION**

Parent Company Name	Newmarket Co-Operative Creameries Limited
Facility Name	Newmarket Co-Operative Creameries Limited
PRTR Identification Number	P0793
Licence Number	P0793-01

Waste or IPPC Classes of Activity

No.	class_name
7.2.1	The treatment and processing of milk, the quantity of milk received being greater than 200 tonnes per day (average value on a yearly basis).

Address 1	OES Consulting
Address 2	FBD House
Address 3	Fels Point, Tralee
Address 4	Co Kerry
	Cork
Country	Ireland
Coordinates of Location	-8.99530 52.2153
River Basin District	IESW
NACE Code	1051
Main Economic Activity	Operation of dairies and cheese making
<b>AER Returns Contact Name</b>	Ms Josephine Angland
<b>AER Returns Contact Email Address</b>	Josephine.Angland@Kerry.com
<b>AER Returns Contact Position</b>	Environmental Manager
<b>AER Returns Contact Telephone Number</b>	029 60005
<b>AER Returns Contact Mobile Phone Number</b>	087 2033358
<b>AER Returns Contact Fax Number</b>	029 60024
<b>Production Volume</b>	27440.0
<b>Production Volume Units</b>	Tonnes
<b>Number of Installations</b>	1
<b>Number of Operating Hours in Year</b>	0
<b>Number of Employees</b>	0
<b>User Feedback/Comments</b>	
<b>Web Address</b>	

**2. PRTR CLASS ACTIVITIES**

Activity Number	Activity Name
8(c)	Treatment and processing of milk

**3. SOLVENTS REGULATIONS (S.I. No. 543 of 2002)**

Is it applicable?	No
Have you been granted an exemption ?	No
If applicable which activity class applies (as per Schedule 2 of the regulations) ?	n/a
Is the reduction scheme compliance route being used ?	n/a

4.1 RELEASES TO AIR

[Link to previous years emissions data](#)

| PRTR# : P0793 | Facility Name : Newmarket Co-Operative Creameries Limited | Filename : P0793\_2011.xls | Return Year : 2011 |

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SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

POLLUTANT		METHOD			Please enter all quantities in this section in KGs			QUANTITY	
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	Emission Point 2	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
11	Sulphur oxides (SOx/SO2)	E	CRM	Kane May Quintox Portable	9790.0	7000.0	16790.0	0.0	0.0
08	Nitrogen oxides (NOx/NO2)	E	EN 14792:2005	Flue Gas Analyser	4650.0	3980.0	8630.0	0.0	0.0

\* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

POLLUTANT		METHOD			Please enter all quantities in this section in KGs			QUANTITY	
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	Emission Point 2	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0	0.0

\* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (As required in your Licence)

POLLUTANT		METHOD			Please enter all quantities in this section in KGs			QUANTITY	
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	Emission Point 2	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
210	Dust	E	CRM	Zambelli ZB2 stack sampler and 5005 control unit	3350.0	2920.0	6270.0	0.0	0.0

\* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

Additional Data Requested from Landfill operators

For the purposes of the National Inventory on Greenhouse Gases, landfill operators are requested to provide summary data on landfill gas (Methane) flared or utilised on their facilities to accompany the figures for total methane generated. Operators should only report their Net methane (CH4) emission to the environment under T(total) KG/yr for Section A: Sector specific PRTR pollutants above. Please complete the table below:

Landfill: Please enter summary data on the quantities of methane flared and / or utilised	Newmarket Co-Operative Creameries Limited				
	T (Total) kg/Year	M/C/E	Method Code	Designation or Description	Facility Total Capacity m3 per hour
Total estimated methane generation (as per site model)	0.0				N/A
Methane flared	0.0				0.0 (Total Flaring Capacity)
Methane utilised in engine/s	0.0				0.0 (Total Utilising Capacity)
Net methane emission (as reported in Section A above)	0.0				N/A

4.2 RELEASES TO WATERS

[Link to previous years emissions data](#)

| PRTR# : P0793 | Facility Name : Newmarket Co-Operative Creameries Limited | Filename : P0793\_2011.xls | Return Year : 2011 |

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SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

Data on ambient monitoring of storm/surface water or groundwater, conducted as part of your licence requirements, should NOT be submitted under AER / PRTR Reporting as this

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT		Method Used			QUANTITY			
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
12	Total nitrogen	M	OTH	Standard Method	816.0	816.0	0.0	0.0
13	Total phosphorus	M	OTH	Standard Method	48.2	48.2	0.0	0.0

\* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT		Method Used			QUANTITY			
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

\* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT		Method Used			QUANTITY			
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
238	Ammonia (as N)	M	OTH	Standard Method	43.3	43.3	0.0	0.0
303	BOD	M	OTH	Standard Method	390.9	390.9	0.0	0.0
306	COD	M	OTH	Standard Method	1907.3	1907.3	0.0	0.0
240	Suspended Solids	M	OTH	Standard Method	1877.9	1877.9	0.0	0.0
327	Nitrate (as N)	M	OTH	Standard Method	1487.5	1487.5	0.0	0.0
387	Ortho-phosphate (as P)	M	OTH	Standard Method	97.1	97.1	0.0	0.0

\* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE

| PRTR# : P0793 | Facility Name : Newmarket Co-Operative Creameries Limited | Filename : P0793\_2011.xls | Return Year : 2011 |

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Please enter all quantities on this sheet in Tonnes

0

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz Waste : Name and Licence/Permit No of Next Destination Facility	Non	Haz Waste : Address of Next Destination Facility	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used		Haz Waste : Name and Licence/Permit No of Recover/Disposer	Non Haz Waste: Address of Recover/Disposer			
Within the Country	15 01 02	No	2.11	plastic packaging	R3	M	Weighed	Offsite in Ireland	Cork Recycling Company .WFP-CK-09-0022-02		Lehenaghmore, Togher, Cork ,"", Ireland		
Within the Country	20 03 01	No	41.2	mixed municipal waste	D1	M	Weighed	Offsite in Ireland	Munster Waste Management .WFP-CK-09-0032-02		Ballygrellihan, Castletownroche, Cork, , Ireland		
Within the Country	20 01 01	No	4.7	paper and cardboard	R3	M	Weighed	Offsite in Ireland	Glenanore Cartons, WFP-CK-09-0008-01		Ballygrellihan, Castletownroche, Cork, , Ireland		
Within the Country	02 05 02	No	863.2	sludges from on-site effluent treatment	R3	M	Weighed	Offsite in Ireland	Cremins Compost, WFP/LK/2009/23A/R1		Coolaleen , Broadford, Limerick, , Ireland		
Within the Country	02 01 10	No	2.84	waste metal	R4	M	Weighed	Offsite in Ireland	Cork Metal Ltd., CK(s) (491/07)		Dublin Hill, Cork , , , , Ireland		
Within the Country	17 06 05	Yes	10.98 (18)	construction materials containing asbestos	D1	M	Weighed	Offsite in Ireland	Oxigen Environmental Ltd, W0208-01		Merrywell Industrial Estate , Ballymount Rd., Dublin 22, , Ireland	Richard Buhck GmbH & Co. KG, A53F00502, 21502, Wiershop, , , , Germany	21502, Wiershop, , , , Germany
Within the Country	20 01 01	No	35.0	paper and cardboard	R3	M	Weighed	Offsite in Ireland	Cork Recycling Company .WFP-CK-09-0022-02		Lehenaghmore, Togher, Cork ,"", Ireland		

\* Select a row by double-clicking the Description of Waste then click the delete button

[Link to previous years waste data](#)

[Link to previous years waste summary data & percentage change](#)



